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L6: Entry 1 of 25   File: USPT   Jun 18, 2002

US-PAT-NO: 6407823
DOCUMENT-IDENTIFIER: US 6407823 B1

TITLE: Network system, information processing device and information memory medium

DATE-ISSUED: June 18, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Aoki; Mikio	Suwa			JPX

US-CL-CURRENT: 358/1.15; 358/1.12, 358/434, 358/435, 358/438

CLAIMS:

What is claimed is:

1. A network system, comprising:

a client printer that performs a data processing request; and

a server device that executes data processing that includes at least one of an image processing that is requested by the client printer and processing relating to a printer language;

the client printer comprising:

a data processing ability information inquiry unit that queries other devices connected to the network concerning ability information relating to the data processing;

a client processor that determines a server device from which to request data processing based on the ability information received from the other network devices, transmits printing data that is to be data processed to the server device, requests data processing, and requests transmission of the processed data from the server device to the client printer; and

a printing controller that controls reception and printing of the processed data received from the server device;

the server device comprising:

an ability information reply unit that replies with ability information relating to the server device's own data processing ability in response to an ability information inquiry from the client printer; and

a data processing server that processes printing data that is received from the client printer and transmits the processed data to the client printer in response to a transmission request from the client printer.

2. The network system according to claim 1, the ability information reply unit further comprising:

a data processing program information inquiry unit that queries other devices connected to the network system concerning data processing program information including information concerning existence or nonexistence of a data processing programs;

a virtual program information determining unit that determines virtual program information including the server device's own executable data processing program information, based on the data processing program information that is received from the other devices that are connected to network; and

a virtual program information reply unit that replies with ability information relating to data processing to the client printer based on the virtual program information.

3. The network system of claim 2, the data processing server further comprising:

a data processing program receiving unit that determines another device on the network that has a data processing program necessary for data processing based on the received data processing program information, requests the other device to transmit the data processing program, receives the data processing program that is transmitted from the other device in response to the transmission request, and stores the data processing program in memory.

4. The network system of claim 3, the data processing program information comprising:

version information of the data processing program, wherein the data processing program receiving unit determines whether another device on the network has the necessary data processing program based on the version information and requests the other device to transmit the necessary data processing program.

5. The network system of claim 4, wherein when a plurality of data processing programs of a same kind exist, the data processing program receiving unit requests transmission from a device having the newest data processing program based on the version information.

6. The network system of claim 1, wherein the server device stores the data processing program in its own memory, and the data processing server processes the printing data by using the stored data processing program.

7. The network system of claim 6, wherein if another device has a same kind of data processing program as is stored in the server device's own memory, the data processing program receiving unit requests transmission of the data processing program from the other device only when the version information of the other device indicates the data processing program is newer.

8. The network system of claim 1, wherein the client processor transmits the client printer's own device information to the server device, and the data processing server determines the data processing program for processing printing data based on the device information that is received from the client printer.

9. The network system of claim 1, wherein the client printer stores the data processing program in its own memory, the client processor transmits the printing data and the data processing program that is stored in the client printer's own memory to the server device and requests processing, and the data processing server processes printing data using the data processing program that is received from the client printer.

10. The network system of claim 9, wherein the data processing program which the client printer transmits to the server device includes at least a data processing program that performs image processing.

11. The network system of claim 9, the ability information relating to data processing comprising:

version information of the data processing program, wherein when the server device has a same kind of data processing program as the data processing program that is stored in client printer's own memory, the client processor transmits data processing program to the server device only when version information of the data processing program indicates that the server device's data processing program is newer.

12. The network system of claim 2, wherein the data processing program information inquiry unit queries other devices that are connected to the network concerning data processing program information when at least one of the following situations occur: (1) the server device is connected to the network, (2) another device is connected to the network, and (3) there is an ability information inquiry from the client printer.

13. The network system of claim 1, wherein the printing data includes image data, or image data and a printing command.

14. An information processing device connectable by a network, to a plurality of devices, including a printer that requests data processing, and executes data processing that includes at least one of processing relating to image processing that is requested by the printer, and processing relating to a printer language, the information processing device comprising:

an ability information reply unit that replies with ability information relating to the information processing device's own data processing in response to an ability information request from the printer relating to data processing, and

a data processing server that processes printing data that is received from the printer, and transmits the processed printing data to the printer in response to a transmission request from the printer.

15. The information processing device of claim 14, the ability information reply unit comprising:

a data processing program information inquiry unit that queries other devices connected to the network concerning data processing program information, which includes existence or nonexistence information of data processing programs;

a virtual program information determining unit that determines virtual program information that includes information indicating the information processing device's own executable data processing program, based on the data processing program information that is sent from the other devices that are connected to the network in response to a data processing program inquiry; and

a virtual program information reply unit that replies to the data processing program inquiry from the printer, based on the virtual program information.

16. The information processing device of claim 14, the data processing server comprising:

a data processing program receiving unit that determines another device on the network that has a data processing program that is necessary to process data, based on the data processing program information, requests the other device to transmit the data processing program, receives the data processing program that is transmitted from the other device in response to the transmission request, and stores the received data processing program in memory.

17. The information processing device of claim 16, the data processing program information comprising:

version information of the data processing program, wherein the data processing program receiving unit determines another device that has the data processing program based on the version information and requests the other device to transmit the data processing program.

18. The information processing device of claim 17, wherein when there are a plurality of data processing programs of a same kind, the data processing program receiving unit requests transmission from another device that has the newest data processing program based on the version information.

19. The information processing device of claim 14, wherein the data processing server has the data processing program prestored in the server device's own memory, and processes the printing data by using the prestored data processing program.

20. The information processing device of claim 19, wherein when a same kind of data processing program is stored in the server device's own memory, the data processing program receiving unit requests transmission from another device only when the ability information of the other device indicates that the data processing program is newer.

21. The information processing device of claim 14, wherein the data processing server determines the data processing program for processing printing data based on the device information that is received from the printer.

22. The information processing device of claim 14, wherein the data processing server processes the printing data using the data processing program that is received from the printer.

23. The information processing device of claim 14, wherein the data processing program that is received from the printer includes at least a data processing program for performing image processing.

24. The information processing device of claim 14, further comprising:

a data processing ability inquiry unit that queries other devices connected to the network concerning ability information relating to data processing;

a client processor that determines a server device from which to request data processing based on the ability information that is sent from the other devices that are connected to the network in response to an ability information inquiry, transmits the printing data to be data processed to the server device, requests data processing, and requests transmission of the processed data from the server device; and

a printing controller that controls reception and printing of the processed data received from the server device.

25. The information processing device of claim 24, wherein the ability information relating to data processing comprises:

version information of the data processing program, wherein when the server device has a same kind of data processing program as the data processing program which is stored in the information processing device's own memory, the client processor transmits the data processing program to the server device only when the version information stored in the information processing device's own memory indicates that the server device's data processing program is newer.

26. The information processing device of claim 15, wherein the data processing program information inquiry unit queries other devices that are connected to the network concerning data processing program information when at least one of the following situations occurs: (1) the information processing device is connected to the network, (2) when another device is connected to the network, and (3) when an ability information inquiry is made from the client printer.

27. The information processing device of claim 14, wherein the printing data comprises image data, or image data and a printing command.

28. An information memory medium connectable by a network to a plurality of devices that include a printer that performs a data processing request, and which stores information to control an information processing device that can execute data processing that includes at least one of image processing and processing relating to a printer language that is requested from the printer, comprising:

ability information relating to the information processing device's own data processing for response to an ability information inquiry relating to data processing from the printer, and

information for data processing of printing data that is received from the print, and for transmitting the data processed data to the printer in response to a transmission request from the printer.

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L6: Entry 7 of 25   File: USPT   Feb 6, 2001

US-PAT-NO: 6184996
DOCUMENT-IDENTIFIER: US 6184996 B1

TITLE: Network printer with remote print queue control procedure

DATE-ISSUED: February 6, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gase; Stephen T.	Boise	ID		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Hewlett-Packard Company	Palo Alto	CA			02

APPL-NO: 8/ 879247   [PALM]
DATE FILED: June 18, 1997

INT-CL: [7] G06 F 15/00

US-CL-ISSUED: 358/1.15; 358/1.16
US-CL-CURRENT: 358/1.15; 358/1.16

FIELD-OF-SEARCH: 395/112, 395/114, 395/115, 395/826, 395/859, 395/874, 395/200.48, 395/101, 358/1.13, 358/1.15, 358/1.16, 358/1.17, 358/1.14, 358/1.1, 358/1.2, 358/1.6, 358/1.9, 358/1.11, 358/1.18, 358/407, 358/404, 358/444, 358/468, 358/434-439, 710/6, 710/39, 710/54, 710/15, 710/18, 710/19, 710/40, 710/52, 709/218, 709/103, 709/203, 709/207

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

[Search Selected]   [Search ALL]

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	5754774	May 1998	Bittinger et al.	709/203
☐	5787237	July 1998	Reilly	395/112
☐	5804803	September 1998	Cragun et al.	235/375
☐	5946458	August 1999	Austin et al.	358/1.15

OTHER PUBLICATIONS

"Adobe Strikes Back in Language Battle With New Web-Savvy PostScript Level 3", Hard Copy Observer, Sep. 1996, pp 1, 24, 25.
"Pipeline's Internet Printing System Lets Printer Surf the Web", Hard Copy Observer, Mar. 1997, pp 45, 46.

ART-UNIT: 262
PRIMARY-EXAMINER: Popovici; Dov

ABSTRACT:

The method of the invention enables remote control of a print queue in a network
printer which receives print jobs over the Internet from plural client processors. The
network printer includes a server procedure which enables transfer of files from the
network printer over the network and a browser procedure which enables retrieval of
files from client processors over the network. The method includes the steps of:
establishing a queue of received print job identifiers; employing the server procedure
to provide a first file to a client processor to enable the client processor to
transmit a status request concerning the print queue; receiving a message including the
status request and transmitting, in response, a second file with queue data to the
client processor, the second file further including queue alteration choices; receiving
a response message from the client processor with at least one queue alteration value;
and altering the queue accordingly. The method further includes the step of responding
to a received URL from a scanner, by employing the browser procedure to retrieve a text
file identified by the URL.

12 Claims, 4 Drawing figures

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L6: Entry 10 of 25　　　　　　　　File: USPT　　　　　　Jul 25, 2000

US-PAT-NO: 6094276
DOCUMENT-IDENTIFIER: US 6094276 A

TITLE: Printer server system and printout method

DATE-ISSUED: July 25, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yamaguchi; Kotaro	Kawasaki			JPX
Arakawa; Naoto	Yokohama			JPX

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo			JPX	03

APPL-NO: 8/ 979961　　[PALM]
DATE FILED: November 26, 1997

PARENT-CASE:
This application is a continuation of application Ser. No. 08/597,380 filed Feb. 8,
1996, now abandoned, which is a continuation of application Ser. No. 08/245,168 filed
May 17, 1994, now abandoned.

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	5-116227	May 18, 1993

INT-CL: [7] G06 F 15/00

US-CL-ISSUED: 358/1.15; 358/1.13
US-CL-CURRENT: 358/1.15; 358/1.13

FIELD-OF-SEARCH: 395/101, 395/112, 395/114, 395/116, 395/117, 395/200.3, 395/275,
395/500, 395/500.34, 395/500.48, 395/527, 358/448, 358/455, 358/456, 358/467, 358/1.1,
358/1.13, 358/1.15, 358/1.17, 358/1.18, 382/162, 382/163, 382/164, 382/165, 382/167,
382/169, 709/200.31, 709/200.32, 709/200.33, 709/200.47, 709/200.49, 709/200.69,
709/681, 709/200, 710/1

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

| Search Selected | | Search ALL |

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4651278	March 1987	Herzog et al.	364/300
☐	4739397	April 1988	Hayashi	358/501
☐	4905097	February 1990	Watanabe et al.	358/456
☐	4956638	September 1990	Laruy et al.	340/701
☐	5031050	July 1991	Chan	358/298
☐	5050098	September 1991	Brown, III et al.	395/102
☐	5075874	December 1991	Steeves et al.	395/112
☐	5086497	February 1992	Horiuawa et al.	395/147
☐	5087981	February 1992	Ng et al.	358/459
☐	5166786	November 1992	Sauai et al.	358/76
☐	5220674	June 1993	Morgan et al.	395/800
☐	5228118	July 1993	Sasaki	395/112
☐	5243691	September 1993	Kawahara et al.	392/112
☐	5261080	November 1993	Khoyi et al.	395/500
☐	5270837	December 1993	Chen et al.	358/467
☐	5282059	January 1994	Fukushima et al.	358/456
☐	5293466	March 1994	Bringmann	395/112
☐	5296940	March 1994	Kawashima	358/155
☐	5303336	April 1994	Kageyama et al.	395/114
☐	5353388	October 1994	Motoyama	395/117

ART-UNIT: 274
PRIMARY-EXAMINER: Popovici; Dov
ASSISTANT-EXAMINER: Garcia; Gabriel I.
ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper & Scinto

ABSTRACT:

In a printer server system composed of a plurality of client terminals, a file server and a printer server connected to the same network, the file server manages raster image data to be printed out and queuing information for queuing print commands. If a main controller judges that the data type of a raster image differs from a data type capable of being outputed in the printer server connected to the network, a gray-scale raster image, for example, is converted to image data of a data type, such as binary data, capable of being printed out. The converted image data is then outputted by the printer server.

38 Claims, 23 Drawing figures

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L6: Entry 16 of 25   File: USPT   Oct 26, 1999

US-PAT-NO: 5974234
DOCUMENT-IDENTIFIER: US 5974234 A

TITLE: Centralized print server for interfacing one or more network clients with a plurality of printing devices

DATE-ISSUED: October 26, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Levine; Jonathan D.	Rochester	NY		
Gombert; Barry G.	Rochester	NY		
Mayer; James L.	Rochester	NY		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Xerox Corporation	Stamford	CT			02

APPL-NO: 8/ 842546   [PALM]
DATE FILED: April 15, 1997

INT-CL: [6] G06 F 15/00

US-CL-ISSUED: 395/114
US-CL-CURRENT: 358/1.16

FIELD-OF-SEARCH: 395/114, 395/650, 395/113, 709/104, 709/226, 709/300, 709/301, 709/302

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

[Search Selected]   [Search ALL]

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	5113494	May 1992	Menendez et al.	395/163
☐	5179637	January 1993	Nardozzi	395/114
☐	5220674	June 1993	Morgan et al.	395/800
☐	5557798	September 1996	Skeen et al.	395/650
☐	5625757	April 1997	Kageyama et al.	395/113
☐	5881213	March 1999	Shaw et al.	395/114

ART-UNIT: 271
PRIMARY-EXAMINER: Johns; Andrew W.
ATTY-AGENT-FIRM: Cohen; G. B.

ABSTRACT:

A printing system in which one or more clients communicate with a plurality of printers by way of a print server, whose architecture is characterized by a plurality of layers, is provided. In practice, one of the plurality of layers receives a request from one of the one or more clients and the request designates an operation to be performed with respect to one of the plurality of printers. The printing system includes an application layer, communicating with the one of the plurality of layers, for developing a command expression based on the request received by the one or the plurality of layers, and a communications interface including a first connectivity module and a second connectivity module, with the first connectivity module communicating with a first one of the plurality of printers and the second connectivity module communicating with a second one of the plurality of printers. The printing system further includes a routing interface, communicating with both the application layer and the communications interface, for directing the command expression to a selected one of the first connectivity module and the second connectivity module. Accordingly, the selected one of the first and second connectivity modules uses the command expression to perform at least a part of the designated operation with respect to the one or the plurality of printers.

13 Claims, 8 Drawing figures

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L6: Entry 23 of 25   File: USPT   Jul 2, 1996

US-PAT-NO: 5533174
DOCUMENT-IDENTIFIER: US 5533174 A

TITLE: Network font server

DATE-ISSUED: July 2, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Flowers, Jr.; James R.	Acton	MA		
Batchelder; Ned	Brookline	MA		
Macomber; Edward W.	Sterling	MA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Digital Equipment Corporation	Maynard	MA			02

APPL-NO: 8/ 145057   [PALM]
DATE FILED: October 26, 1993

INT-CL: [6] G06 K 15/00

US-CL-ISSUED: 395/114; 395/110
US-CL-CURRENT: 358/1.15; 358/1.11

FIELD-OF-SEARCH: 395/114, 395/110, 395/150, 395/151

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected   **Search ALL**

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
[ ]	5138696	August 1992	Nagata	395/110
[ ]	5167013	November 1992	Hube et al.	395/110
[ ]	5206736	April 1993	Simpson	395/110
[ ]	5293587	March 1994	Deb et al.	395/150
[ ]	5301267	April 1994	Hassett et al.	395/150

ART-UNIT: 245
PRIMARY-EXAMINER: Powell; Mark R.
ASSISTANT-EXAMINER: Legree; Tracy M.
ATTY-AGENT-FIRM: Fisher; Arthur W. Johnston; A. Sidney

ABSTRACT:

A font server communicates with workstations and printers, i.e., clients, on a network and provides them with font-specific information that allow them to select a licensed font and to specify how to customize the font. The font server responds to a client's printing or display requests regarding a specific font or printing or display features, such as letter height, orientation, writing mode. The font server may customize a font by remapping glyphs, rotating or scaling characters and symbols, or adding special kerning pairs or ligatures. The font server then performs all the necessary rendering calculations and manipulations using the font, and produces the bit maps or outlines required for displaying or printing the desired characters and symbols. The font server translates fonts into a format that is compatible with the client's text processing application and operating system. To minimize traffic on the network, the font server and client use name-identifiers to communicate.

41 Claims, 6 Drawing figures